Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(Currently Amended)** A communication system comprising:

a plurality of communication devices being connected to a transmission line ~~adjust~~ and adjusting transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data,

wherein the data includes first data having high priority and second data, each of said communication ~~device including~~devices includes a transmission control unit ~~which transmits the data to the transmission line at a random time randomly representing a time existing after a first time elapses until a second time elapses~~ configured to transmit the second data at a random time determined by random numbers set after elapse of a first time and before elapse of a second time, and the first time and the second time represent periods of time from a time when ~~a~~ the carrier signal on the transmission line is gone, when newly transmitting the data, and~~, transmits~~ to transmit the first data to the transmission line before elapse of the first time, when transmitting ~~a~~ the first data ~~whose priority is high~~.

2. **(Currently Amended)** The communication system according to claim 1, wherein

the first data ~~whose priority is high~~ is ACK data representing a reception confirmation.

3. **(Currently Amended)** The communication system according to claim 1, wherein the first data ~~whose priority is high~~ is NACK data representing a non-reception confirmation with respect to reception of a series of data groups to which sequence numbers are assigned.

4. **(Currently Amended)** A communication system comprising:

a plurality of communication devices being connected to a transmission line ~~are~~ and divided into one master communication device and other slave communication devices to logically form a star-type connection and ~~adjust~~ adjusting transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device,

wherein the data includes first data to be transmitted, second data to be relayed and third data for relaying the second data, the master communication device ~~including~~ includes a transmission control unit ~~which transmits the data to the transmission line at a random time randomly representing a time existing after a first time elapses until a second time elapses~~ configured to transmit the first data to the transmission line at a random time determined by random numbers set after elapse of a first time and before elapse of a second time from a time when the carrier signal on the transmission line is

gone, when newly transmitting the data, and to transmit the third data before elapse of the first time from a time when ~~a carrier signal on the transmission line is gone when newly transmitting the data and, transmits the data to the transmission line before the first time~~ the master communication device receives the second data when ~~transmitting~~ arelaying the second data ~~that has been relayed~~.

5. **(Currently Amended)** A communication system comprising:

a plurality of communication devices being connected to a transmission line ~~are~~ and divided into one master communication device and other slave communication devices to logically form a star-type connection and ~~adjust~~ adjusting transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device,

wherein the data includes first data to be relayed, ACK data representing a reception confirmation of the first data, second data for relaying the first data, and general data, the master communication device ~~including~~ includes a transmission control unit ~~which transmits the data to the transmission line at a random time randomly representing a time existing after a first time elapses until a second time elapses from a time when a carrier signal on the transmission line is gone when newly transmitting the data and, transmits ACK data representing a reception confirmation of the data after the reception of the data is confirmed before the first time and transmits the data relayed to~~

~~the transmission line before the first time from a time when a carrier signal of the ACK data is gone when receiving a data that has been relayed~~ configured to transmit the general data at a random time determined by random numbers set after elapse of a first time and before elapse of a second time from a time when the carrier signal on the transmission line is gone, when newly transmitting the data, and to transmit the ACK data to the transmission line before elapse of the first time from a time when the master communication device confirms reception of the first data and, when receiving the first data, to transmit the second data to the transmission line before elapse of a first time from a time when a carrier signal of the ACK data is gone.

6. **(Currently Amended)** A communication system comprising:

a plurality of communication devices being connected to a transmission line ~~are~~ and divided into one master communication device and other slave communication devices to logically form a star-type connection and ~~adjust~~ adjusting transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device,

wherein the data includes first multi-address data to be relayed, ACK data representing a reception confirmation of the first multi-address data, second multi-address data for relaying the first multi-address data, third multi-address data for relaying the first multi-address data, and general data, the master communication

device ~~including~~ includes a transmission control unit ~~which transmits the data to the transmission line at a random time randomly representing a time existing after a first time elapses until a second time elapses from a time when a carrier signal on the transmission line is gone when newly transmitting the data and, in a case where multi-address data relayed is received, repeating processing in which the master communication device transmits ACK data representing a reception confirmation of the data after the reception of the data is confirmed before the first time, transmits the multi-address data relayed to the transmission line before the first time from a time when a carrier signal of the ACK data is gone, and transmits the multi-address data before the first time from a time when a carrier signal of the multi-address data is gone~~ configured to transmit the general data at a random time determined by random numbers set after elapse of a first time and before elapse of a second time from a time when the carrier signal on the transmission line is gone, when newly transmitting the data, and to transmit the ACK data to the transmission line before elapse of the first time from a time when the master communication device confirms reception of the first multi-address data and, when the first multi-address data is received, to transmit the second multi-address data to the transmission line before elapse of the first time from a time when a carrier signal of the ACK data is gone, and to subsequently transmit the third multi-address data before elapse of the first time from a time when a carrier signal of the second multi-address data is gone.

7. **(Currently Amended)** A communication system comprising:

a plurality of communication devices being connected to a transmission line ~~are~~ and divided into one master communication device and other slave communication devices to logically form a star-type connection and ~~adjust~~ adjusting transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device,

wherein the data includes first multi-address data to be relayed, collision avoidance data that is arbitrary data for generating a carrier signal on the transmission line, second multi-address data for relaying the first multi-address data, third multi-address data for relaying the first multi-address data and general data, each of the plurality of communication ~~device including~~devices includes a transmission control unit ~~which transmits the data to the transmission line at a random time randomly representing a time existing after a first time elapses until a second time elapses from a time when a carrier signal on the transmission line is gone in a case where the communication device newly transmits data and transmits~~ configured to transmit the general data at a random time determined by random numbers set after elapse of a first time and before elapse of a second time from a time when the carrier signal on the transmission line is gone, when newly transmitting the data, to transmit the collision avoidance data ~~that is arbitrary data generating a carrier signal on the transmission line~~ at a random time ~~randomly representing a time existing after a first time elapses until a second time elapses from a time when a carrier signal on the transmission line is~~

~~gone~~determined by random numbers set after elapse of the first time and before elapse of the second time from a time when the carrier signal on the transmission line is gone, when transmitting the multi-address data, and ~~transmits~~ to transmit the multi-address data before elapse of the first time from a time when a carrier signal of the collision avoidance data is gone, when the ~~in a case where~~ multi-address data is transmitted,

wherein a transmission control unit of the master communication device, when receiving the first multi-address data, ~~repeats a processing in which~~transmits the second multi-address data ~~is transmitted~~ to the transmission line before elapse of the first time from a time when ~~the~~ a carrier signal of the first multi-address data is gone, and subsequently transmit the third multi-address data before elapse of the first time.

8. **(Canceled)**

9. **(Currently Amended)** A communication device employed in a communication system, the communication system including a plurality of communication devices being connected to a transmission line ~~adjust~~ and adjusting transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data, wherein the data includes first data having high priority and second data, the communication device comprising:

a transmission control unit ~~which transmits~~configured to transmit the second data to the transmission line at a random time ~~randomly representing a time existing after a~~

~~first time elapses until a second time elapses~~ determined by random numbers set after elapse of a first time and before elapse of a second time, and the first time and the second time represent periods of time from a time when ~~a~~ the carrier signal on the transmission line is gone, when newly transmitting the data, and~~, transmits~~ to transmit the data to the transmission line before elapse of the first time when transmitting ~~a~~ the first data ~~whose priority is high~~.

10. **(Canceled)**

11. **(Currently Amended)** A communication method in which a plurality of communication devices are connected to a transmission line and adjust transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data, wherein the data includes a first data having high priority and second data, the communication method comprising:

a data transmission step of transmitting the second data to the transmission line at a random time ~~randomly representing a time existing after a first time elapses until a second time elapses~~ determined by random numbers set after elapse of a first time and before elapse of a second time, and the first time and the second time represent periods of time from a time when ~~a~~ the carrier signal on the transmission line is gone when newly transmitting the data; and

a priority data transmission step of transmitting the first data ~~whose priority is~~

~~high~~ to the transmission line before elapse of the first time in a case where a transmission request of the first data ~~whose priority is high~~ is generated.

12. **(Currently Amended)** The communication method according to claim 11, wherein the first data ~~whose priority is high~~ is ACK data representing a reception confirmation.

13. **(Currently Amended)** The communication method according to claim 11, wherein the first data ~~whose priority is high~~ is NACK data representing a non-reception confirmation with respect to reception of a series of data groups to which sequence numbers are assigned.

14. **(Currently Amended)** A communication method in which a plurality of communication devices are connected to a transmission line ~~are~~ and divided into one master communication device and other slave communication devices to logically form a star-type connection and adjust transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device, wherein the data includes first data whose transmission is requested and ACK data representing a reception confirmation of the first data, the communication method comprising:

a data transmission step of transmitting the first data to the master

communication device at a random time ~~randomly representing a time existing after a first time elapses until a second time elapses~~ determined by random numbers set after elapse of a first time and before elapse of a second time from a time when ~~a~~ the carrier signal on the transmission line is gone in a case where a slave communication device of a transmission source transmits the first data ~~whose transmission is requested~~ by request;

a data relay step in which the master communication device that has received the first data ~~receives the data and~~ transmits the first data to a slave communication device of a transmission destination before elapse of the first time ~~elapses~~ from a time when a carrier signal of the first data on the transmission line is gone;

an ACK transmission step in which the slave communication device of the transmission destination transmits ACK data representing a reception confirmation to the master communication device after the reception of the data is confirmed before elapse of the first time; and

an ACK relay transmission step in which the master communication device that has received the ACK data ~~receives the ACK data and~~ transmits the ACK data to the slave communication device of the transmission source before elapse of the first time ~~elapses~~ from a time when a carrier signal of the ACK data on the transmission line is gone.

15. **(Currently Amended)** A communication method in which a plurality of communication devices are connected to a transmission line ~~are~~ and divided into one

master communication device and other slave communication devices to logically form a star-type connection and adjust transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device, wherein the data includes first data whose transmission is requested and ACK data representing a reception confirmation of the first data, the communication method comprising:

a data transmission step of transmitting the first data to the master communication device at a random time ~~randomly representing a time existing after a first time elapses until a second time elapses~~ determined by random numbers set after elapse of a first time and before elapse of a second time from a time when ~~a~~ the carrier signal on the transmission line is gone in a case where a slave communication device of a transmission source transmits the first data ~~whose transmission is requested~~by request;

an ACK transmission step in which the master communication device that has received the first data transmits the ACK data representing a reception confirmation to the slave communication device of the transmission source after the reception of the first data is confirmed before elapse of the first time; and

a data relay transmission step in which the master communication device transmits the first data to a slave communication device of a transmission destination after the transmission of the ACK data before elapse of the first time from a time when a carrier signal of the ACK data is gone.

16. **(Currently Amended)** A communication method in which a plurality of communication devices are connected to a transmission line ~~are~~ and divided into one master communication device and other slave communication devices to logically form a star-type connection and adjust transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device, wherein the data includes multi-address data whose transmission is requested and ACK data representing a reception confirmation of the multi-address data, the communication method comprising:

a multi-address data transmission step of transmitting the multi-address data to the master communication device at a random time ~~randomly representing a time existing after a first time elapses until a second time elapses~~determined by random numbers set after elapse of a first time and before elapse of a second time from a time when ~~a~~ the carrier signal on the transmission line is gone in a case where a slave communication device of a transmission source transmits the multi-address data ~~whose transmission is requested~~ by request;

an ACK transmission step in which the master communication device that has received the multi-address data transmits the ACK data representing a reception confirmation to the slave communication device of the transmission source after the reception of the multi-address data is confirmed before elapse of the first time; and

a multi-address data relay transmission step of ~~repeating~~ processing a series of

data transmissions in which the master communication device transmits the multi-address data to a slave communication device of a transmission destination after the transmission of the ACK data before elapse of the first time from a time when a carrier signal of the ACK data is gone and transmits the multi-address data to a slave communication device of a transmission destination before elapse of the first time from a time when a carrier signal of the multi-address data is gone.

17. **(Currently Amended)** A communication method in which a plurality of communication devices are connected to a transmission line ~~are~~ and divided into one master communication device and other slave communication devices to logically form a star-type connection and adjust transmission timing of data based on a detection result of a carrier signal of another communication device to prevent a collision between signals, thereby performing ~~transmission/reception~~transmission or reception of the data via the master communication device, wherein the data includes collision avoidance data that is arbitrary data generating a carrier signal on the transmission line and multi-address data whose transmission is requested, the communication method comprising:

a collision avoidance data transmission step of transmitting the collision avoidance data ~~that is arbitrary data generating a carrier signal on the transmission line~~ at a random time ~~randomly representing a time existing after a first time elapses until a second time elapses~~determined by random numbers set after elapse of a first time and before elapse of a second time from a time when ~~a~~ the carrier signal on the transmission line is gone in a case where a slave communication device of a

transmission source transmits the multi-address data ~~whose transmission is requested~~by request;

a multi-address data relay transmission step in which the slave communication device of the transmission source transmits the multi-address data to the master communication device before elapse of the first time from a time when a carrier signal of the collision avoidance data is gone; and

an multi-address data relay transmission step of ~~repeating~~ processing a series of data transmissions in which the master communication device that has received the multi-address data transmits the multi-address data to a slave communication device of a transmission destination before elapse of the first time from a time when a carrier signal of the multi-address data is gone and transmits the multi-address data to a slave communication device of a transmission destination before elapse of the first time from a time when ~~a~~ the carrier signal of the multi-address data is gone.